

### Remarks

3. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper et al (5729673) and Bronfeld et al (6308144)
4. Regarding claim 1, Cooper et al show the software control method for forming a two dimensional view of a computer defined graphical model (Figure 5, column 1 lines 34-45), generating a drawing data item associated with a component of the two dimensional view (column 4 lines 35-53, column 5 lines 5-16), adding the drawing item to the view responsive to user activation (column 5 lines 15-37). Cooper et al do not specifically describe forming a user interface to control the addition, but do mention convenient ways to edit the model using an interface (column 5 lines 37-55). Furthermore, Bronfeld et al do show forming the separate sketcher plane interface to add a drawing item to a model (column 10 lines 49-67). This is done for convenient editing of the model. It would have been obvious to a person with ordinary skill in the art to have this feature in Cooper et al, because it would provide a convenient way to edit a model.

The following background information is provided to assist the Examiner in understanding the invention. In CAD/CAM systems, when a user wishes to create a 2D view of a 3D model, such as may be done when creating a drawing plan, the user selects a projection plane and then launches a command to generate the 2D view. One term used to refer to this operation is generative drafting. Following the creation of the 2D view, the user may want to add descriptive information to the 2D view (e.g., the user may want to add dimensions and constraints). In some previous systems, descriptive information is retrieved from the 3D model and added to the 2D view via a fully automated process. This fully automated process doesn't provide for user input to control the process. Thus, during the transfer of descriptive information, the user cannot choose the information to be added, deleted, or moved to the 2D view because the plan (2D view) is not easily readable. One alternative is for the user to manually add descriptive information. However, manually adding descriptive data is very time-consuming.

Generally speaking, claimed inventions provide tools for adding descriptive information that go beyond those currently available to CAD/CAM users. In one aspect, the invention provides a method to add descriptive information to a 2D drawing in a step-by-step fashion during the process of creating a 2D drawing from a 3D model. A user interface may be provided to control the addition of the descriptive information during the 2D drawing generation phase. The user can halt the process during execution (e.g., by pressing a pause button) or can use a semi-automatic mode where a new item is added periodically (with the period being long enough for the user to halt and control the addition of information during the process). Furthermore, in

some realizations, the system is configured to track the user commands to select which modifications are or are not made so that during subsequent generations of the 2D drawing, the user's prior modifications will be reapplied without asking for the end-user assistance. The foregoing description was provided as general background to the claims. Not all of the foregoing features are present in each claim and, accordingly, each claim should be examined and interpreted based on the actual claim language.

Claim 1 has been amended to make clear that what is being claimed is a CAD/CAM software control method that includes forming a two dimensional view of a three dimensional computer defined graphical model. Based on the three-dimensional model, descriptive information associated with a displayed component of the two dimensional view is automatically generated. The method also includes forming a user interface for controlling the addition of the descriptive information to the two dimensional view, and adding a subset of the descriptive information to the two dimensional view responsive to activation of a user interactive device comprising the user interface. The descriptive information is displayed as graphical elements of the two dimensional view. The phrase "the descriptive information is displayed as graphical elements of the two dimensional view" makes clear that the "descriptive information" is information displayed on a printed output page or computer monitor as, for example, words lines and numbers (thus, data which merely affects the display of other output elements, such as, e.g. by affecting rotational and translational positioning of those elements is not encompassed by the term "descriptive information").

The prior art represented by Cooper and Bronfeld is quite different from what is claimed. As understood by the undersigned, what Cooper discloses is a system for use in a video editing environment. The Cooper system can be used to create 2D projections from a 3D model and can be used to manipulating those projections (e.g., by altering the position of a surface plane on which the model is projected. This is not what is claimed. Bronfeld, on the other hand, discloses a CAD/CAM system using a "sketcher plane" to position items being added to a three dimensional model. Bronfeld's "sketcher plane" is understood as being a tool used to enable manual addition of objects to the three dimensional model and is not a process for automatically

generating descriptive information based on a three-dimensional model and associating that information with a two-dimensional view as recited by the claims of the present invention.

In short, neither Cooper nor Bronfeld, alone or in combination, disclose or suggest the addition of descriptive information to the two dimensional views such that the descriptive information is displayed as graphical elements of the two dimensional view. Nor do Cooper or Bronfeld, alone or in combination, disclose or suggest that such descriptive information should be added to a two-dimensional view in the manner recited by the claims (e.g., neither automatic generation of descriptive information nor the interactive selection of a subset of the descriptive information are shown).

Because neither Cooper nor Bronfeld, alone or in combination, teach or suggest all elements of claim 1 (including, e.g., the automatic generation of descriptive information and the addition of descriptive information responsive to interactive user input data entered at a user interface to select to select a subset of the automatically generated descriptive information that is to be added to the two dimensional view), rejection of claim 1 under 35 U.S.C. § 103(a) in light of Cooper and Bronfeld is improper. Accordingly, it is requested that the Examiner withdraw his rejection of claim 1 and allow the claim.

Furthermore, Cooper is directed to a video editing system, not a CAD/CAM system. If the Examiner continues to believe that the claims are not allowable in light of Cooper, the undersigned respectfully requests that the Examiner provide objective evidence of a teaching to apply video editing technology to a CAD/CAM system in the manner recited by the claims of the present invention.

5. Regarding claim 2, Bronfeld et al show that the drawing feature is a dimension (column 10 lines 50-65).
6. Regarding claims 3-4, the drawing item is added after an expiration time if the system is not paused (Cooper et al column 4 lines 35-50).
7. Regarding claim 5, the item is modified (Cooper et al column 5 lines 38-57).
8. Regarding claim 6, a drawing item is deleted and will not appear in the subsequent views (Bronfeld et al abstract, column 15 lines 15-42, column 16 lines 33-50).
9. Regarding claim 7, the drawing item is stopped and an additional view is formed (Bronfeld et al column 16 lines 43-65).

10. Regarding claim 8, a modification is reproduced in a two dimensional view (Bronfeld et al column 16 lines 42-65).
11. Regarding claim 9, the drawing item may ne added automatically or with user intervention (column 16 lines 1-22).
12. Regarding claims 10-12, the drawing mode may be paused in which a user may modify data and generate data (Bronfeld et al column 16 lines 33-55).
13. Regarding claims 13-14, drawing data views may be filtered from being formed (column 16 lines 50-65 of Bronfeld et al).

Amendments made to the base claim 1, as well as to dependent claims 2-14, make clear that neither Cooper nor Bronfeld, alone or in combination, teach or suggest all elements recited by the dependent claims. Accordingly, claims 2 – 14, which depend from claim 1, are allowable for at least the reasons stated with respect to claim 1.

14. Claims 15-23 show the same features as above and are rejected for the same reasons.

The Examiner's rejection is respectfully traversed. The undersigned does not agree that claims 15-23, as originally presented to the Examiner, or as now amended, show the same features as claims 1-14. If the Examiner does not now allow claims 15-23, the undersigned respectfully request that the Examiner fully state any reasons for rejection in accordance with the requirements of MPEP.

Claims 15-23 have been amended to further clairfy the claimed invention. Neither Cooper nor Bronfeld, alone or in combination, teach or suggest all elements recited by claims 15-23. Consequently, rejection of claims 15-23 in light of Cooper and Bronfeld is improper.

Amendment - RCE  
U.S. Application No. 09/329,923  
Our Ref.: 5974-010

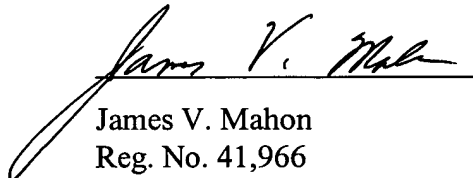
**Conclusion**

Claims 1-23 are now pending and believed to be in condition for allowance. Applicant respectfully requests that all pending claims be allowed.

Please apply any credits or excess charges to our deposit account number 50-0521.

Respectfully submitted,

Date: December 15, 2003

  
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